Aspects of the Science Fiction Genre in Mary Shelley's Frankenstein

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It is generally known that Mary Shelley wrote Frankenstein in response to a suggestion by the poet Lord Byron during the summer of 1816 that his house guests should each write a horror story. As a result, most of their story ideas centered around ghosts or vampires in a mode known as Gothic. Most of the contemporary novelists at that age wrote different types of gothic novels. Mary worked through the summer and the following year to complete her story. The original Gothic mode may be briefly described as one which embodied ghosts, the evil and the good. "The Gothic novels", J. A. Cuddon illustrates, "contain a strong element of the supernatural … wild and desolate landscapes,… monstrous apparitions and curses, … malevolent witches, demoniac powers…".[1] But in the place of miracle she employed science, instead of the exotic she displayed the concrete and she manipulated and combined a complex human and imaginative one.

Although Frankenstein employs most of the formal properties of the science fiction genre, it is never treated as such. In fact, this novel is, by now, one of the classics of the Gothic novel. This is due to a variety of reasons that mostly relates to the conditions of its writing and literary convention of the early nineteenth century. The novel was written in a time when the Gothic novel was at its vogue, newly established by the European romanticism.

Contemporary reviewers, moreover, helped in the establishment of a life-long categorization of Frankenstein as a Gothic novel. As neither science nor literary criticism were that progressive, or at least ready, to admit the birth of a new genre that takes its inspiration from science, reviewers of Frankenstein had to recourse to already existing generic modes in the categorization of this novel.[2] The circumstances under which this novel was produced helped to further this generic designation since the novel was declaredly written as a "horror" story in response to Lord Byron's offer.

Nevertheless, the science fiction elements in this novel are so powerful and subversive that modern critical opinion finds it inconvenient to read this novel as singularly Gothic. Indeed, many twentieth-century critics have come to recognize the potential of Frankenstein as, not only a science fiction novel, but the first in this genre. Jon Turney believes that Mary's "story about finding the secret of life became one of the most

important myths of modernity. Now that the secrets of life are ours for the taking we need to ask what role that myth will play in the collective debate about how to make use of them" [3] .

Although Mary's description of Victor Frankenstein's experiment is rather vague, it is clear that the general perception that her model for the doctor's methodology was the Galvanic theory concerning electricity. Electricity had been the focus of experimentation in the nineteenth century. At that time it would provide long-distance communication and light, but during the last quarter of the eighteenth century the concept of the electric impulse had inspired investigation into the basis of life itself.[4]

It is likely that Mary was familiar with this and other theories. She was also familiar with the early ideas of evolution as put forth by thinkers like Erasmus Darwin. So it is not surprising that she drew some analogy between the scientific theories to which she had been exposed and her own circumstances. [5]

It is more likely that Mary's exposure to these theories, coupled with her loss in her family were synthesized in Frankenstein. It is supposed that Mary subconsciously wished to undo the death of her first daughter, and to protect the lives of her son William and those who might come after him she may have been concerned with the human cost of these great leaps in technological progress .

Yet, Frankenstein is more than the wish of Mary as a mother that her own loss could have been prevented or reversed, and it is more than its analogy with the previous scientific theories and obsessions. Her work came along with the works of others who had made public their attempts to manipulate as well as understand nature and life, and her work surpassed the eighteenth century gothic fiction in more than one way. Frankenstein can be said to draw closer to the modern mode of science fiction. J. A. Cuddon considers this novel as "the key work" in evolution of science fiction. He states that :

> The long-term effect of this novel has been extraordinary. Frankenstein is a completely original work, an innovation. The anonymous, identikit monster created by Dr Frankenstein is the product of scientific research, knowledge and skills. The doctor imparts life to a composite being constructed from bits of corpses.[6]

Science fiction gives our curious minds a speculated view of the future .

Of course a so-called notion of science fiction is not difficult to explicate. But such a definition requires more reconsideration and contemplation especially when it concerns Mary Shelley's Frankenstein. In this sense science fiction is not just a transposition of present circumstances to the future with added aspects such as things that were not found in the past.

Such an outlook would miss the point. It is also important to mention that science fiction should to some extent be in accordance with science. [7]

By definition, Science fiction is a genre of fiction in which the stories often tell about science and foreseen technology. Such stories "involve partially true-partially fictitious laws or theories of science. It should not be completely unbelievable, because it then ventures into the genre fantasy". [8] The plot creates situations different from those of both the present day and the known past. Science fiction texts also include a human element, explaining what effect new discoveries, happenings and scientific developments will have on us in the future .

But this does not mean that it is written only for the audience familiar with science. In fact, science fiction is not worth reading at all if it does not involve humanity with which we can associate. Without that, a science fiction novel would not be a novel, but rather, a speculative essay on things to come. Stuart Sim argues that Frankenstein stands as a warning about the dangers of scientific enquiry conducted for its own sake without regard to social consequences or moral codes. [9]

This is why science fiction is mainly about the human element, and about the effect new discoveries and scientific developments will have on human beings in the future .

As such, Mary Shelley can be claimed to use her novel to express the fear of scientific development unrestrained by moral and ethical limits. She wove ideas from contemporary scientific works in physics, chemistry and medicine. Dr. Victor Frankenstein, who seeks to produce life at all costs, ends up constructing a creature that plagues him to the end [10] .

Frankenstein can also be taken as a warning against the over-reaching of modern man and the industrial revolution, alluded to in the novel's subtitle, The Modern Prometheus. Prometheus in Greek mythology stole the fire from the gods and gave it to mankind. But by doing this he brought destruction when human beings started to use the fire for negative purposes. This figure could stand for the scientist and the fire could stand for either technology or science.

The story has had an influence across literature and popular culture and spawned a complete genre of horror stories and films. It is often considered the first fully realized science fiction novel due to its pointed, if gruesome, focus on artificial intelligence . [11]

Although Mary Shelley's Frankenstein is considered primarily in the tradition of a Gothic tale and as a moral fable which fits in the literary tradition of Dr. Faustus whose protagonist "sells his soul to gain knowledge forbidden to him and all of mankind" [12], this is exactly what brings it to the

theme behind, and may be the archetype, of the modern science fiction .

Victor Frankenstein begins by telling about his happy youth in Geneva, spent with his parents and adopted sister Elizabeth. He tells how he got interested in natural philosophy and how he yearned to discover the secrets of heaven and earth:

While my companion contemplated with a serious and satisfied spirit the magnificent appearances of things, I delighted in investigating their causes. The world was to me a secret which I desired to divine. Curiosity, earnest research to learn the hidden laws of nature, gladness akin to rapture, as they were unfolded to me, are among the earliest sensations I can remember.[13] .

At first he is unimpressed with the modern practitioners of the study, founding his hopes on the old alchemists and other discredited philosophers of antiquity. When he goes studying at Ingolstadt at the age of seventeen, he is set straight and deeply immerses himself in the studies of natural philosophy in all its facets .

There comes a point in which he has learned all there is to learn and now he is certain he can see through the secrets of heaven and earth; he can create life. He expresses this by saying," After days and nights of incredible labour and fatigue, I succeeded in discovering the cause of generation and life; nay, more, I became myself capable of bestowing animation upon lifeless matter". [14]

The most interesting point here is that Mary Shelley made her protagonist, Victor Frankenstein, a practicing scientist and gave him an interest in galvanic electricity, one of the advanced technologies of the early 1800s. Galvani showed that stimulation of a dead frog's nerve by electrical current causes contraction of the muscle to which it is attached. Scientists were excited by the potential use of this new force and research was conducted throughout Europe on the application of electricity to induce and sustain life. So the electrical shock is the stimulating force that reanimates the dead body parts used by Frankenstein to create his creature .

Saliently, the body doesn't really work on electricity. It mostly works on chemical energy, generated by enzymes in the process of breaking down sugars. Nerve cells manage to transmit messages across the body via electrical impulses. Now, there has been some success in bringing dead people back to life by shocking them. This is what happens to certain patients of heart failure. A specific voltage which is applied to such cases makes the heart work again. In other words, it brings the seemingly dead body back to life. Electrical impulses cascade across the muscle cells, telling them when to contract.

After collecting the parts from the dead bodies Victor Frankenstein could what can nowadays call he artificially created life. By discovering the secret of how to impart life to dead matter, thus he created a creature by artificial means. He describes the steps, which he calls "instruments of life", that led to this outcome and after that he describes:

> …I might infuse a spark of being into the lifeless thing that lay at my feet...; the rain pattered dismally against the panes, and my candle was nearly burnt out, when, by the glimmer of the half extinguished light, I saw the dull yellow eye of the creature open; it breathed hard, and a convulsive motion agitated its limbs. [15]

The spark here can be termed as the spark of life which Victor could get from a certain source of electrical power and in a way he shocked the dead body with and his creation came to life. Arguably this creation is a kind of "artificial life" or life form evolved from inanimate forms into animate. But this newly breathing creature with opened "dull yellow eye :"

> …turns into our worst fears of what artificial life might become: an alien life-form motivated by deep hatred for the human race, whom he feels, not unreasonably, has rejected him and must be punished for having done so. It is no accident that the story has exerted such an appeal over horror. [16]

This means that Frankenstein reaches an advanced stage of work on the project and he feels unable to go on with his creation and destroy the unfinished creature, one with superhuman powers that puts humanity's future in jeopardy. Thus Frankenstein's obsession is restricted to the completion of the project and he never looks beyond this. Any deviation from the norm is destructive. This is a Global warning, an access point to the impossible. Once he becomes aware of the technical problem the new being later manifests that he will come face to face with the convention of what most of the modern science fiction and movies present. In other words, like a dangerous technology, the monster in modern terms also can not be disposed of and its destruction is inevitable. There is an implicit and urgent question such works would ask, that is, what will such artificial lives or life-forms decide to do if they start to develop identity? and that humanity may not be able to control once they move past certain level of sophistication.Victor regrets :

> I considered the being whom I had cast among mankind, and endowed with the will and power to effect purposes of horror, such as the deed he had done, nearly in the light of my own vampire, my own spirit let loose from the grave, and forced to destroy all that was dear to me. [17]

This deed is murdering William. According to Stuart Sim whereas Shelley's fictional world had to deal with only one scientist whose experiment threatened humanity world, ours has to deal with "multinational companies in pursuit of the potentially enormous profits that success in artificial intelligence, artificial life, cloning and stem-cell research could bring." [18]. Although it is impossible to reanimate dead bodies, recent researches in genetic engineering and biochemistry have brought to light the opportunity to manipulate life forms .

As such, on a different level Frankenstein could be conceived as warning of the inherent dangers in technological developments of modern science fiction. Lee McCauley argues that the Terminator movie, I, Robot; A.I.: Artificial Intelligence, Blade Runner, Robocop and others even though they come from science fiction literature their themes remain that such creations attempt to harm people or even humanity. [19] "Critics", Adam Roberts also discusses, "sometimes express mild surprise at the range and persistence of Frankenstein's influence: it continues to make its presence felt today in countless film and TV versions, as well as in texts such as James Cameron's Terminator (1984) that reconfigure Shelley's novel in a machine SF idiom". [20]

So, Victor Frankenstein's life was later destroyed because of an obsession with the power to create life. The monster he created could be seen as a representation of those who did wrong in the name of science. Thus, in this respect Shelley's narrative can be used to draw parallels in nowadays science fiction.

Following Mary Shelley's Frankenstein in the modern age the artificial human beings and their creators have become standard ingredients of modern science fiction and horror films. In horror genre certain creatures are usually not very different from Frankenstein's creation. When science films developed the monster figure is mimicked by artificial beings which appear in mechanized form as robots, androids and cyborgs, most prominently in the stories of Isaac Asimov. The robots are presented as separate parts put together by a specialized person obsessed with his craft like Victor and after certain mechanism the separate parts become a moving one with eyes, mouth, hands, legs and body.

Not only this, in fact in most cinematic plots and movies certain modifications are given to the artificial being. It is no longer formed from dead body parts. One of the main protagonists in the popular science fiction TV series Star Trek-The Next Generation (1987-1994) is an android named Data. Despite his somewhat monstrous appearance, Data is an artificial being like Frankenstein's monster which is fully integrated into the society of the 23rd century as the commander of the starship. [21]

Mary Shelley's novel influenced many writers or inspired them to continuations and adaptations. Shelly McRae states that :

> Writers of the age took notice and began implementing science into their writings and ultimately science became the basic tenet for such notables as H.G. Wells, Jules Vern, and Isaac Asimov. Today, Shelley's Frankenstein can be cited as the prototype of science fiction. That she was first and foremost a writer, and not schooled in the academics of science, most likely allowed her to write freely and without constraint regarding the technical applications and validity of current scientific discoveries. [22]

It also can be seen as a revision of the Frankenstein's monster. In Shelley's novel the creature is endowed with human emotions but it is afraid of humans because it lacks knowledge of the society and culture it is thrown into. When Victor meets the creature at last determining to destroy it, it complains," these bleak skies I hail, for they are kinder to me than your fellow-beings. If the multitude of mankind knew of my existence, they would do as you do, and arm themselves for my destruction [23] .

Of course Victor's creature is unable to understand the language of other human beings and, like an unprogrammed robot, it starts little by little to watch secretly the people around it and listen as they communicate with each other. "I found that", the creature tells Victor, "these people possessed a method of communicating their experience and feelings to one another by articulate sounds. I perceived that the words they spoke sometimes produced pleasure or pain, smiles or sadness, in the minds and countenances of the hearers… I learned and applied the words, fire, milk, bread, and wood".[24] Data, on the contrary, has the knowledge of mankind stored in his brain's computer memory, but incapable of showing human emotions and feelings. Shelley's monster looks for the knowledge of the world around him and his own identity while Data's goal is to learn emotions and to become more human .

There is an important point that should be kept in mind. In Shelley's novel the monster destroys its creator in the end. Almost in most science stories the creator of a being is destroyed by his own creation. The being here could be any form of technology starting with robots and ending with much more developed invention like the nuclear bomb. Nuclear bomb is also a kind of threat which not only threatens the scientist who discovered it but also the entire globe. This is to show that the aggressive attitude of the creation causes the death of its creator .

In the same manner the alien series, Alien Resurrection, 1997, starts with that the heroine is cloned and genetically blended with DNA from the aggressive aliens in army laboratories. The result is a monstrous being endowed with superhuman strength and lust for blood, which is constantly torn between its human and alien sides. Like Frankenstein's monster which threatens Victor and human beings by saying:" '… If you will comply with my conditions, I will leave them and you at peace; but if you refuse, I will glut the maw of death, until it be satiated with the blood of your remaining friends' " [25], she also represents a threat to her surroundings. She is again the killer of her corrupt makers represented by a team of obsessed scientists.

Scientifically, all the scientists have to do is manufacture the DNA, and add special specifications they will have the ability to create new, completely synthetic, forms of life. They can now also take the DNA out of one bacterium, put it into a bacterium of a similar but different species, and watch as the inserted DNA took over and turned the host cell into a replica of the species from which the DNA first came. But this work, like Victor's, has brought us much closer. It has also brought us closer to a dangerous conflict between scientific progress and public perception. Public fear that scientists are creating new, synthetic forms of life playing God in the lab. Significantly, we are a scientifically step closer to the day when the creators of life will be real people, not in the stories of novel and myth, but in modern laboratories .

When one comes to think about it, it is possible to come to the idea that this novel can be classified as science fiction. It is with the growth of science and the fear of scientific and technological growth which created the science fiction genre. In our world today, science plays a vital role in many different aspects. Science is important in roles such as aiding the sick, and finding cures. But such examples as nuclear energy and cloning also raise questions about science harmful results.

Frankenstein stands as the possibility of creating life forms similar to what at present can be termed as artificial life abbreviated as A.L. or artificial intelligence abbreviated as A.I. It is also a kind of a warning,

therefore, about the dangers of scientific enquiry conducted for its own sake without regard to social consequences or moral codes. It can have outcomes which are against humanity's best. Nuclear power has done more harm than good, for example, and the problem of how to dispose of nuclear waste is difficult to be solved, given the risk it poses not just to the current generation but to generations for thousands of years into the future. Pursuing the metaphor, in global warming we have succeeded in creating our own uncontrollable monster, initiating a sequence of events which really does put human survival significantly at risk.

Notes

1. J.A. Cuddon, The Penguin Dictionary of Literary Terms and Literary Theory, (Penguin Books), 1999, p356.

2. see for example, Catherine Spooner and Emma McEvoy eds., The Routledge Companion to Gothic, (Taylor & Francis e-Library), 2007.

3. Jon Turney, Frankenstein's Footsteps: Science, Genetics and Popular Culture, (Yale University Press), 1998, p.3 .

4. Lisa Nocks, Frankenstein, in a Better Light, (Journal of Social and Evolutionary Systems, Issue 2, Academic Search Premier, EBSCO Industries Inc.), 2009.

5. Ibid.

6. J. A. Cuddon, Literary Terms and Literary Theory, p.793.

7. For more information, see Edward James and Farah Mendlesohn eds., The Cambridge companion to Science Fiction, (Cambridge University Press), 2003, p.15.

8. www.ReadWriteThink. NCTE/IRA, 2005, 1:34 pm .

9. Stuart Sim, The Eighteenth-Century Novel and Contemporary Social Issues: An Introduction, (Edinburgh University Press), 2008, p.166.

10. Susan E. Lederer and Richard M. Ratzan, Mary Shelley: Frankenstein: or, the Modern Prometheus, from A Companion to Science Fiction, ed. by David Seed, (Blackwell Publishing Ltd.), 2005, p.5.

11. Wikipedia the Free Encyclopedia, 2009, 15:35 pm.

12. Gutenberg ReviewsCloggie science fiction, Frankenstein or the Modern Prometheus, webmaster@cloggie.org, 15-1-2002.

13. Mary Shelley, Frankenstein or the Modern Prometheus, (Wordsworth Classics), 1999, p.30
14. Ibid, p.41.

15. Ibid, p. 45.

16. Stuart Sim, The Eighteenth-Century Novel and Contemporary Social Issues, p.166.

17. Frankenstein, p.60.

18. Stuart Sim, p. 160.

19. The Frankenstein Complex and Asimov's Three Laws, www.mccauley@memphis.edu, 5/6/2009, 11:07 am, p.1.

20. Adam Roberts, Science Fiction, (London and New York), 2000, p. 57 .

21. Shelly McRae, The Influence of Mary Shelly's Frankenstein on Science Fiction Literature, www.Helium.Inc.com html, 1/1/2004, 01: 35 pm.

22. See Esther Schor, The Cambridge Companion to Mary Shelley, (Cambridge University Press), 2003, p.84.

23. Frankenstein, p.78.

24. Ibid, pp.86-87

25. Ibid, p.77.

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